UNCLASSIFIED LE--ARIENIC POLYPERIZATION OF EPSILON CAPROLACTAM IN THE PRESENCE OF CTIVALUES WITH UNSATURATED GROUPS -U-HOS-1651-KORSHAK, V.V., FRUNZE, T.M., ZAITSEV, V.I., FURAGHEV, V.V., ABCHIMITSER. T.M. NTRY OF INFO--USSR E PUBLISHED----70 BJECT AREAS--CHEMISTRY PIC TAGS--POLYMERIZATION: CAPROLACIAM, SODIUM. POLYMER NTROL MARKING--NO RESTRICTIONS CUMENT CLASS--UNCLASSIFIED STEP NO--UR/0459/70/012/002/0416/0423 MXY REFLIERAME--1992/0324 RC ACCESSION NOT-APOLITIES 1151 1 1151 1 Fit STATES THE STATES OF THE STATE

PROCESSING DATE--020CT70 UNCLASSIFIED 025 12 RC ACCESSION NO--APOILL518 BSTRACT/EXTRACT--(U) GP+0- ABSTRACT. THE PULYMN. OF EPSILON CAPROLACTAM (1) IN THE PRESENCE OF NA IS ACCELERATED BY N. METHACRYLCYL. EPSILUN, CAPROLACTAM (II) AND H SUB2 C: CHCONPH SUB2 (III). THE PROPERTIES OF POLY, EPSILON, CAPROLACTAM DEPEND ON THE AMT. OF II OR III VERY SATISFACTORY POLYMER BLOCKS WERE OBTAINED WHEN 0.35-1.00 MOLE PERCENT II OR 0.50-2.00 MOLE PERCENT III WERE ADDED TO I TOGETHER WITH I EQUIV. (WITH RESPECT TO II OR III) NA. LARGER OR SMALLER AMTS. OF IT OR ITT GAVE BLOCKS WITH SURFACE CRACKS. THE INCREASE IN THE AMT. OF II OR ITI INCREASES THE INSULY. OF THE POLYMER IN HOOME SUB2. THIS IS DUE TO THE PARTIAL COPOLYMN. OF I WITH II OR III. THE MECHANISM OF ACCELERATION OF POLYMN. BY II OR III INVOLVES FORMATION OF POLYMERIC ACTIVATOR MOLS., SUCH AS IV.

Acc. Nr. APO048857 Abstracting Service: F70 Ref. Code CHEMICAL ABST. P70 UR0459

90918u Viscometric and electron-microscopic studies of the polypyromellitimide of anilinephthalein. Korshak, V. V.; Pavlova, S. A.; Boiko, L. V.; Babchinitser, T. M.; Vinogradova, S. V.; Vygodskii, Ya. S.; Golubeva, N. A.; (Inst. Elementoorg, Soedin., Moscow, USSR). Vysokomol. Soedin., Ser. A 1970, 12(1), 56-62 (Russ). The hydrodynamic properties of the title polymer (1) (prepd. from pyromellitic dianhydride and aniline-phthalein by a high temp. polycyclization in PhNO2 or by a 2-stage procedure) were studied. Viscosity and mol. wt. measurements indicated that the reaction conditions had no effect on the structure of I. The intrinsic viscosity of I was proportional to the mol. wt. (2000-160,000). The rigid I macromols, had a linear structure and were present in soln, as assocd, globules. The dimensions of the globules (as measured by electron microscopy) were similar to those calcd, from viscometric data using the P. Debye-A. M. Bueche equation (1948).

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REEL/FRAME 19800624

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USSR UDC 591.1

GENIN, A. M., BABCHINSKIY, F. V. and KOTOVSKIY, Ye. F.

"The Effect of Pure Oxygen Under Normal Atmospheric Pressure on Animals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1971, pp 69-73

Abstract: Mice and rats were exposed to a mixture of gases consisting of 94 to 98% oxygen and about 0.8% carbon dioxide (relative humidity 60 to 90% and temperature 18 to 23°C) for 5 days to determine whether shifts resulting from the inhalation of pure oxygen are due to increased partial pressure of oxygen in the blood or to pulmonary disturbances and development of asphyxia. During the first 6 hours, inhalation of pure oxygen had a stimulating effect on motor and sexual activity and metabolism. Signs of pathological disorders in the lungs and other organs (perivascular edema and small diapedetic hemorrhages) appeared after 6 to 12 hours' exposure. During the next 12 hours pathological disorders in the lungs intensified although external 1/2

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GENIN, A. M., BABCHINSKIY, F. V., and KOTOVSKIY, Ye. F., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1971, pp 69-73

respiration remained adequate. Thereafter pathological changes became severe enough to impair gas exchange between the alveoli and blood and gave rise to hypoxia. Hypoxia together with the inhibition of enzymatic activity and hematopoiesis led to the accumulation of toxic substances, metabolic acidosis, and degenerative changes in the parenchymatous organs. It was concluded that inhaling pure oxygen under normal pressure first causes systemic disturbances resulting from increased oxygenation of the blood and then pulmonary disorders, secondary changes in the heart, liver, kidneys, etc., and death.

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Agriculture

USSR

UDC 632.4:582.285.1

BABCHUK, I. V., Director of the Plant Protection Administration, Ministry of Agriculture Ukrainian SSR and NOVICHENKO, L. G., Senior Agronomist

"Controlling Smut in the Ukraine"

Moscow, Zashchita Rasteniy, No 1, 1970, pp 11-12

Abstract: Measures used to control covered smut of barley and wheat in the Ukraine in 1969 are described. A 0.3-1.2% incidence of covered smut was reported in the area, with an insignificant degree of damage on farms in six oblasts, and complete absence of the disease in two oblasts. Two other oblasts had rayons without any sign of disease. The majority of farms in the Ukraine have switched to seed treatment with suspensions and moistening. It is noted that the kolkhozes and sovhozes must be better equipped with all-purpose machinery to improve covered smut control. Measures are now being taken for broader introduction of thermal decontamination at farms of scientific research institutes and experimental stations equipping the kolkhozes and sovhozes with high-quality seed to improve control 1/2

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BABCHUK, I. V., et al., Moscow, Zashchita Rasteniy, No 1, 1970, pp 11-12

of loose smut. This led to reduction in development of the disease in 1969, although more radical measures are required. The 40 installations in the republic for decontaminating seeds with respect to loose smut are inadequate. In view of the fact that the All-Union Corn Institute has been most successful in controlling smut, the Ukrainian SSR Ministry of Agriculture held a three-day seminar on smut at this institute in 1969. Special recommendations were prepared for heat treatment of seeds, which will be published in early 1970.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

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WC 547.217.41542.9431542.976

NOVOSELOVA, L. V., ZUBTSOVA, L. I., BABEL', V. G., and PROSKURYAKOV, V. A.

"Study of the Conversions of Dialkylphosphites in Synergistic Mixtures with MB-1 in the Process of Inhibited Oxidation of Decane"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 6, Jun 73, pp 1329-1333

Abstract: An attempt has been made to investigate the chemical conversions of disopropylphosphite / DIP/ and disoctylphosphite / DOP/ in the process of inhibited oxidation of decane at 175° by means of IR and PMR spectroscopy. On the basis of spectral data it has been shown that the hydrocarbon portion of DIP and DOP are eliminated in pure state and in the hydrocarbon medium (175°) with the formation of phosphorus acid. An effect of synergism has been established for the composition of phosphorus acid with 4,4°-methylbis-2,6-di-tert-butylphenol / MB-1/ during the process of inhibited oxidation of white oil, the reaction being carried out at 175°, with total concentration of 0.005 g-mole/1.

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USSR .

UDC 665.11:542.913

MOVOSELOVA, L. V., BABEL!, V. G., ZAYCHEHMO, L. P., PROSEURYAMOV, V. A.

"Synergism of Mixtures of Alkylphenol and Phosphonate Antioxidants in the Process of Oxidation of White Paraffin Oil"

Leningrad, Zhurnal prikladnoy khimii, Vol 64, No 10, Oct 71, pp 2349-2352

Abstract: This paper deals with new antioxidants, their mixtures and synergistic properties. Alkylphenols are the basic antioxidants; thiocarbonates, sulfides, phosphites and phosphonates are the synergists which enhance the inhibiting action of alkylphenols. An attempt to explain the mechanism and factors responsible for the synergistic effect is described here. The experiment involved dialkylphosphonate (as the synergist) and alkylphenol (antioxidant). Mixtures of both were tested on white paraffin oil as a readily oxidizable medium. The total concentration of the inhibitors in the oil was constant and equal to 0.005 mol/l. Only the "phosphite-phenol" ratio was varied. Binary diagrams were plotted on the basis of the test data for

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

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NOVOSELOVA, L. V., et al, Zhurnal prikladnoy khimii, Vol 64, No 10, Oct 71, pp 2349-2352

each individual component and of the phosphite-phenol mixtures as functions of concentration. The results show ionol: NB-1 in ratios of 0.001:0.004 and 0.002:0.003 to have the highest synergistic effect. The maximum induction period exceeded that of the most effective inhibitor, at a concentration of the latter equal to the total, by a factor of 2.0-2.5. When used independently, the antioxidants were not very effective. In mixtures with thiophosphonate they inhibit oxygen absorption, with the effect directly proportional to the content of thiophosphonate. Curves are shown to demonstrate the kinetics of oxygen absorption during oxidation of paraffin oil in the presence of different mixtures of inhibitors at 1750C; the induction period of paraffin oil oxidation as a function of phosphonate: ionol molar ratio.

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- 61 -

Acc. AT0048673_ Abstracting Service: INTERNAT. AEROSPACE ABST. 5-70 UR 3663 A70-25294 # Low-cycle fatigue of heat-resistant materials EI612 and EI437B at normal and high temperatures (Malotsiklovaia ustalosť zharoprochnykh materialov E1612 i E1437B pri normal'nykh i povyshennykh temperaturakh). A. E. Babenko (Kievskii Politekhnicheskii Institut, Kiev, Ukrainian SSR). Problemy Prochnosti, vol. 2, Feb. 1970, p. 35-39. In Russian. Results of low-cycle fatigue tests of heat-resistant materials E1612 and E1437B under soft loading conditions in the temperature range from 20 to 800 C. It is established that at all the temperatures considered the dependence of the number of cycles to failure on the value of the amplitude stress in logarithmic coordinates can be approximated by straight lines the slopes of which do not depend on temperature. The patterns of change in the residual strain per half-cycle as a function of stress and temperature are established. A.B.K. 10

ACTION OF THE PROPERTY OF THE

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UDC 632.951

PERMYAKOVA, N. M., SANIN, V. A., BABENKO, A. I., TKACHENKO, I. V., BIT'KO, I. YA., TOPOROV, A. N., Ukrainian Scientific Research Institute of Plant Protection

"On the Effectiveness of Dilor Compound"

Moscow Khimiya v Sel'skom Khozyaystve, Vol 8, No 10 (83), Oct 70, pp 33-34

Abstract: The article is a report on tests conducted in 1968 and 1969 to determine the effectiveness of dilor (13-dihydroheptachlorine) against the common and gray beet weevils, as well as the Colorado beetle. The experiments were conducted on collective farms in the Mironovskiy Rayon of the Kiyevskaya Oblast. Contact and enteric action of the chemical was studied as well as the speed and duration of the effect of dilor alone and in combination with polychloropinene and DDT. When sprayed in warm weather (20-24°C), dilor was found to be as effective as DDT and polychloropinene, and even better than DDT with respect to speed. In hot weather, dilor was more effective than DDT and equivalent to polychloropinene, and at low temperatures the chemical was more active than polychloropinene and at least as 1/2

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PERMYAKOVA, N. M., et al., Khimiya v S l'skom Khozyaystve, Vol 8, No 10 (83), Oct 70, pp 33-34

effective as DDT. Both binary mixtures were more rapid-acting than their separate components. Dilor has little effect against beet weevils, killing no more than 30% of this pest with maximum doses. Experiments in 1968 showed that dilor is effective against the Colorado beetle in all stages of development. In view of its low toxicity for warm-blooded animals (mean lethal dose 2000-9000 mg/kg), dilor should be considered as a substitute for DDT.

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CIA-RDP86-00513R002200230001-1

UNCLASSIFIED PROCESSING DATE--13MOV70
TITLE--SOLUBILITY IN A UREA, AMMONIUM NITRATE, AMMONIUM DIHYDRUGEN
PHOSPHATE, WATER QUATERNARY SYSTEM -UAUTHOR-(02)-KAGANSKIY, I.M., BABENKO, A.M.

CCUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 742-9

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, UREA, AMMONIUM NITRATE, PHOSPHATE, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3004/2016

STEP NO--UR/0080/70/043/004/0742/0749

CIRC ACCESSION NO--APO132277

UNCLASSIFIED.

2/2 013 UNCLASSIFIED PROCESSING DATE—13NOV70
CIRC ACCESSION NO—APO132277
ABSTRACT/EXTRACT—(U) GP-O— ABSTRACT. SOLY. IN THE 5 QUATERNARY MIXTS.
CONSISTING OF UREA, NH SUB4 H SUB2 PO SUB4, AND AQ. SOLN. OF NH SUB4 NO SUB3 (CONTG. 10, 20, 30, 40, AND 50PERCENT NH SUB4 NO SUB3) WAS MEASURED. LIQ. PHASE COMPN., EQUIL. SOLID PHASES, AND CRYSTN. TEMPS. WERE DETO. NO FORMATION OF DOUBLE SALTS TAKES PLACE. THE COMPNS. OF SOLNS. CONTG. MAX. (N PLUS P SUB2 O SUB5) (25.5—29.2PERCENT AT ODEGREES AND 24-1-23.0PERCENT AT HINUS 10DEGREES) ARE TABULATED.
FACILITY: SEVERODONETSK. FILIAL, GIAP, SEVERODONETSK, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--MUTUAL SOLUBILITY IN A UREA POTASSIUM NITRATE WATER SYSTEM -U-

AUTHER-(G3)-BAGENKG, A.M., KAGANSKIY, I.M., VAKHAUSHEV, YU.A.

COUNTRY OF INFO--USSR

SOURCE-- LH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 749-53

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE

TGPIC TAGS--SCLUBILITY, UREA, POTASSIUM NITRATE, FERTILIZER, LOW TEMPERATURE EFFECT, CKYSTALLIZATION

CENTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3008/1499

STEP NO--UR/0080/70/043/004/0749/0753

TIRC ACCESSION NO--APOL34500

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--110EC70 CIRC ACCESSION NO--APOI38500 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE PURPOSE OF THIS INVESTIGATION WAS TO ESTABLISH COMPNS. WHICH WOULD YIELD THE MAX. PLANT NUTRIENTS. USING SOLNS. IN WHICH THE N DOUBLE BEND K SUB2 O WAS APPROX. 0.42:1. A LIQ. FERTILIZER WAS DETAINED WITH A CRYSTN. TEMP. OF MINUS 10DEGREES CONTG. 49PERCENT OF N PLUS K SUB2 O AND A MIXT. WITH A CRYSTN. POINT OF MINUS 20LEGREES CONTG. 40PERCENT OF N PLUS K SUB2 O. A MIXT. WITH A CRYSTN. POINT OF OCEGREES CONTG. N PLUS K SUB2 O 52.3PERCENT WAS ALSO OBTAINED BY STARTING WITH A N DOUBLE BOND K SUB2 G RATIO OF 0.42:1. SCENS. CONTG. A N DOUBLE BOND K SUB2 O RATIO OF 1:1 WERE ALSO OBTAINED BUT THEIR TOTAL CONTENT OF NUTRIENTS WAS, LOWER. THUS, SCLNS. WITH A CRYSTN. TEMP. OF ODEGREES CONTAINED N PLUS K SUB2 G 33. BPERCENT, AND WITH A CRYSTN. PGINT OF MINUS LODEGREES THE N PLUS K SUBZ O WAS 29.2PERCENT. FACILITY: SEVERODONETSK. FILIAL, GIAP, SEVERODONETSK, USSR.

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USSR

UDC 621.357.7.035.4:669.128(088.8)

BABENKO, B. A., DUNISHCHEV, P. A., MITRYAKOVA, A. V., CHECHETKINA, V. A., and SHILOVSKIYA, V. P., Saratov Polytechnical Institute

"A Process for the Reduction of Oxidized Chloride Electrolyte for Iron Plating"

Author's Certificate No 346389, filed 25 Dec 70, published 22 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L316P)

Translation: The process is patented for the reduction of oxidized chloride electrolyte of iron plating during its purification by electrolysis. It is improved in that in order to increase the speed of the reduction, the process is carried out with the application of ultrasonic vibrations having frequencies of 18-22 kHz and an intensity of 0.8-1.5 watts/cm² for a ratio of the anode to cathode surface of 3:1 and D_a 10-30 amps/decimeter². The application of the ultrasonic vibrations speeds up the process of the reduction of the oxidized chloride electrolyte during the iron plating 7 to 10 fold.

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BABENKO C.O. UNCLASSIFIED PROCESSING DATE-COULLTO.

HILE-CUNIENT OF ZINC AND ACTIVITY OF CARBON ANHYDRASE IN HISSUES OF AN

ERGANISM WITH EXPERIMENTAL LEUCOSIS -U
ALTHOR--BABENKO, C.C., MAZEPA, I.V.

CCUNTRY OF INFO--USSR

SEURCE--LKRAYAS'KIY BICKHIMICHAIY ZHURNAL, 1976, VEL 42, NR 1, PP 108-112

CATE PUBLISHED ---- 70

SLEJECT AREAS--EICLECICAL AND MEDICAL SCIENCES

TCPIC T/GS--WHITE RAT, ZINC, BLOCK CHEMISTRY, LIVER, SPLEEN, BCNE, BLCCK SCRUM, FCLAFCGPAPHY, MUSCULCSKELETAL SYSTEM

CENTREL MARKING--NE RESTRICTIONS

DCCUMENT CLASS--LNCLASSIFIED PRCXY REFL/FRAME--1979/0861

STEF NC--LR/0300/70/042/001/0108/0112

CIRC ACCESSION NO--APOCA7337

UNCLASSIFIED

Acc. Nr: AP0047337

Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns kiy Biokhimichniy Zhurnal, 1970,

Vol 42, Nr 1, pp/08-//2-

CONTENT OF ZINC AND ACTIVITY OF CARBON ANHYDRASE IN TISSUES OF AN ORGANISM WITH EXPERIMENTAL LEUCOSIS

G. O. Babenko, I. V. Mazepa Medical Institute, Ivano-Frankiysk

Summary

In experiments with 195 albino mongrel rats with the transplanted Shvets erythromyelosis dynamics of the quantitative content of zinc in blood and its fractions, liver, spieen, bones and muscular tissue, the form in which this metal is present in blood serum and liver as well as activity of carbon anhydrase of blood were studied in the development.

The content of zinc in blood and organs was determined by the polarographic method by Babenko, the activity of carbon anhydrase—by the method of Vendt and coauthors blood serum and liver was obtained by filtration through colloidal sacks.

It is established that concentration of zinc in blood and serum lowers with the development of the leucosis process.

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The content of zinc, being in the blood serum in a form which is not found with protein components, sharply increases with leucosis, that is especially pronounced in the period of generalization and therminal states of the mentioned disease. The content of zinc in the formed elements is not essentially changed in the development of the

The activity of carbon anhydrase of blood in the process of leucosis development

in rats is sharply inhibited after strain transplantation.

In liver and its ultrafiltrate the level of zinc falls with leucosis whereas the intensity of incorporation of this metal into the organic complexes of the organ under

The content of zinc in bone tissue of leucous rats decreases whereas in muscular tissue of these animals the level of the element under study considerably increases.

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BABENKO, K. I., Institute of Applied Mathematics, Academy of Sciences USSR, Moscow

"Steady-State Solutions of the Problem of Incompressible Fluid Flow Past a Body"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 294-297

Abstract: The article considers the flow of a viscous incompressible fluid past a finite body B C R3. By virtue of density constancy, the flow is described by velocity vector u and pressure p, which satisfy the system of Navier-Stokes equations

$$n \cdot \nabla u = \operatorname{grad} p = \frac{1}{\operatorname{Re}} \Delta u,$$

 $\operatorname{div} n = 0$

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BABENKO, K. I., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 294-297 and the boundary conditions on the body

and at an infinitely remote point

$$\lim_{|x|\to\infty}u\left(x\right)=u_{x}$$

The system of coordinates can always be selected so that $u_{\infty} = (1, 0, 0)$. In accordance with (1) the unit of length is taken to be the diameter of region B. If the following condition is fulfilled:

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BABENKO, K. I., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 294-297

$$\int_{\partial B} u_0 \cdot n \, d\sigma = 0,$$

where n is the normal to ∂ B and do the Lebesgue measure on ∂ B, then the existence of a solution to a flow problem for which the Dirichlet integral

$$\int_{B} |\nabla u_{t}^{p} dx \geq \infty, \quad |G| = R^{p} \times B.$$

is finite is proved.

The article outlines the proof of a theorem whereby for any solution of the flow problem with a finite Dirichlet integral the following relation,

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BABENKO, K. I., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 294-297 postulated by R. FINN, is fulfilled:

$$u(x) - u_{\alpha} = O(|x|^{-\alpha}), \quad \alpha > 1/\epsilon_{\alpha}$$

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- 15 -

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

USSR

UDC: 533.6.011

BABENKO, K. I., IVANOVA, V. N., KAZANDZHAN, E. P., KUKARKINA, M. A., RAD-VOGIN, Yu. B.

"Concerning Nonstationary Flow Around the Head Part of a Blunt Body"

Tr. II Resp. konf. po aerogidromekh., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey" (Works of the Second Republic Conference on Aerohydromechanics, Heat Exchange and Mass Exchange. "High-Velocity Aerodynamics" Section), Kiev, Kiev University, 1971, pp 29-h3 (from RZh-Mekhanika, No 5, May 72, Abstract No 58325)

Translation: A numerical solution is found for the problem of unsteady flow at supersonic velocity around the head part of a blunt body which has a plane of symmetry and is located in a flow of ideal gas. A normalizing system of curvilinear coordinates is used in which the region to be calculated has fixed boundaries. A finite-difference method close to the traditional procedure is generalized and developed (Babenko, K. I., Voskresenskiy, G. P., Zh. Tychisl. Extem. i matem. fiz., 1961, 1, No 6, pp 1051-1060 -- ECKMekh., 1962, 68123; Babenko, K. I., Voskresenskiy, G. P., Lyubimov, A. N., Pusenov, V. V., Prostranstvennoye obtekaniye gladkikh tel ideal'nym gazom [Three-

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BABENKO, K. I. et al., Tr. II Resp. konf. po aerogidromekh., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey", Kiev, Kiev University, 1971, pp 29-43

-Dimensional Flow of an Ideal Gas Around Smooth Bodies!, Mcscow, "Nauka", 1964, RZhMekh, 1965, 4B270K). The main difference of the proposed method involves calculation of the head shock wave and construction of a well-conditioned system of difference equations. A finite-difference approximation is used for the derivatives together with the corresponding coefficients of the equations. The resultant nonlinear system of difference equations is solved by an iteration method, the overall system being broken down into subsystems which relate to each of the three spatial variables. Indeterminacies are discovered in the difference equations which take place on the zero ray. The algorithm which is developed is used for determining stationary supersonic flow around triaxial ellipsoids and ellipsoids of revolution by the method of adjustment. The results of numerical calculations are given. P. I. Chushkin.

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1 x 160 /5000112 Babenko, K. I., V. N. Ivanova, E. P. 32

teploobmenu i massoobmenu. Sektsiya "Aerodinamika 1971, 29-43. (RZhMekh, 5/72, no. 5B325) bol'shikh skofostey". Kiyev, Kiyevskiy universitet, Respublikanskoy konferentsii po serogidromekhanike. ewition of a blunt hooly. TH: Trudy H Radvogin. Nanatearly flow around the leading Kazandzhan, M. A. Kuharkina, and Yu. B.

calculations are presented. triaxial ellipsoids and ellipsoids of revolution. Results of numerical developed is used for the determination of steady supersonic flow around difference equations on the zero radial line is shown. The algorithm each of the three spatial variables. The indeterminate form of the method, the complete system being divided into subsystems pertaining to nonlinear system of difference equations obtained is solved by an iteration derivatives together with the corresponding equation coefficients. The difference equations. Finite-difference approximation is employed for the of the frontal shock wave and the construction of a well-defined system of principal variation of the proposed method is associated with calculation method is generalized and developed similar to an established one. The which the calculated region has fixed boundaries. A finite-difference around the leading section of a blunt body with a plane of symmetry in iner-A normalizing system of curvilinear coordinates is used, in A numerical solution is given for the problem of supersonic flow

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1" USSR

UDC 517.5

BABENKO, K. I., Moscow

"Some Notes on the Approximation of Functions of Many Variables"

Moscow, Matematicheskiy Sbornik, Vol 86(128), No 4(12), Dec 71, pp 499-517

Abstract: In questions of the approximation of functions of many variables the problem of diameters is immediately encountered. The problem of the optimal choice of an approximating finite-dimensional subspace is the problem of A. N. KOLMOGOROV's diameter. It is a very difficult problem to calculate diameters and find extremal subspaces, and so far the problem has been solved completely only in a few cases for functions of one variable. A simpler problem is that of the asymptotic behavior of α_n , \mathcal{K}_n and other diameters. The present article studies the asymptotics behavior of the quantity

$$\frac{\pi^{\mathfrak p}}{\mu}\sup_{f\in\mathfrak W_{\mathfrak p}(M)}\mathfrak E_{\kappa}(f)=2^{m\mathfrak p}\mathfrak K_{\mathfrak p,n}$$

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USSR

BABENKO, K. K., Matematicheskiy Sbornik, Vol 86(128), No 4(12), Dec 71, pp 499-517

and analogous quantities for the classes $\mathcal{W}_r(M)$ and $\widetilde{W}_r^*(M)$. In particular it is shown that there exists $\lim_{n\to\infty}\widehat{\mathcal{R}}_{r,n}=\widehat{\mathcal{R}}_r$, where the constant $\widehat{\mathcal{R}}_r$ does not depend on M. The same relation also takes place for the classes $\mathcal{W}_r(M)$ and $\widetilde{W}_r^*(M)$, the limits for all three classes coinciding. This is a generalization of S. N. BERNSHTEYN's result for a multidimensional case.

It is also proved that

$$\sup_{f\in\mathfrak{D}_r(M)}\mathfrak{E}_n(f)\simeq\alpha_n\{\mathfrak{W}_r(M)\}.$$

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YUSHCHENKO, Ye. L., BABENKO, L. P. and ROGACH, V. D.

"Basic Problems of Realization of COBOL-ALMO Translators"

Materialy Mezhvuz. Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr. [Materials of Inter-University Conference on Automatic Control System Software -- Collection of Works], Moscow, 1973, pp 146-151 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V702).

Translation: The peculiarities of the realization of COBOL related to the use of ALMO are studied. First of all, the basic difficulties in this realization in comparison to a translator from COBOL to a specific machine are noted: the need to "orient the output programs to a certain universality, making them equally suitable for an entire class of machines" and the orientation of ALMO language "to second-generation machines, little suited for the solution of automatic data processing problems." These difficulties are partially overcome by means of the insertion apparatus of ALMO and partially by means of a system of interpreting programs. The set of standard programs suggested was selected considering the provision of both convenience in writing of working programs and in programming of translators.

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Yushchenko, Yu. L., Babenko, L. P. and Rogach, V. D., Materialy Mezhvuz. Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr., Moscow, 1972, pp 146-151.

The exchange of information with external storage (input-output in particular) is largely included among the functions of the operational systems of modern computers. Therefore, in producing input-output verbs in the COBOL programs, the thousands channel of ALMO is used, connecting the ALMO program to the operational systems of specific machines.

The work features a more detailed presentation of problems of programming of the descriptions of data, work with structures, input-output verbs and

The insertion apparatus, a direct element in most macrogenerators in ALMO, is used not only for adjustment of working programs to the parameters of specific machines, but also to reduce the number of jumps in the translator, and also for many other purposes.

In the end, it is specially emphasized that "in designing the output program for the COBOL-ALMO translator, interpreting subroutines are used quite broadly: of the 16 COBOL operators, 6 are fully and 5 partially realized by these subroutines."

L. Khizder

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

USSR

UDC 8.74

BABENKO, L. P., BATRAK, YE. T., YUSHCHENKO, YE. L.

"Basic Problems of Executing the A-COBOL Language"

V sb. <u>Teoriya yazykov i metody postroyeniya sistem programmir</u> (Language Theory and Methods of Constructing Programming Systems—collection of works), Kiev-Alushta, 1972, pp 150-161 (from <u>RZh-Kibernetika</u>, No 12, Dec 72, Abstract No 12V481)

Translation: The algorithms for the A-COBOL-ALMO translator created on the basis of the COBOL-ALMO translator is described. The memory allocation algorithms in the COBOL-translator is based on compiling special information tables about the data containing the information about their size, properties, location and hierarchy. The dimensions of the elementary data are defined by their standards; the dimensions of the group data are defined by the dimensions of their elementary components. In the algorithm for calculating the data dimensions, the stack memory system is used. When determining the location of the data, the accepted relative addressing principle is considered for which each recording is allotted a separate address file. As the beginning of the reckoning, the beginning of the write is taken, and as the reckoning unit, the bit. For data of a new type -- bit data in the A-COBOL execution -- a special system has been developed with the beginning of reading at the beginning of 1/3

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BABENKO, L. P., et al., <u>Teoriya yazykov i metody postroyeniya sistem programmir.</u>, Kiev-Alushta, 1972, pp 150-161

writing; the read unit is a bit. The bit (boolean) data are packed densely in the memory of the ALMO machine. When loading such data, special load files are formed which contain the allocation constants and the relative distances of each of the pieces of data from the beginning of write. These files are formed by the interpreting subprograms of the translator on the basis of the table of lengths of elements of the bit writes compiled when examining the data information tables considering the data hierarchy and their recurrence rate. The stack memory is also used here complicated by the algorithm for considering the recurrence of the bit data when compiling the element length table. For translation of the basic operators of A-COBOL combining the operations of corresponding COBOL operators and the address operations on the indexes, an algorithm was developed which forms the reference in the operating program to the corresponding subroutines of the interpreting system. For translation of the descriptions of the fields, an algorithm was developed which defines their parameters (the field dimension, the field index dimension, and so on) which are used when placing (selecting) an object in the field. The description of the syntax of the A-COBOL media supplementing the translator from COBOL to the translator from A-COBOL to the output language is presented. The description is presented in Bacus normal form supplemented by the indexes of the semantic 2/3

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BABENKO, L. P., et al., <u>Teoriya yazykov i metody postroyeniya sistem programmir</u>., Kiev-Alushta, 1972, pp 150-161

modules given in brackets and located directly behind the correspondent syntactic structural elements. A description of the semantics of the A-COBOL media is presented by describing their translation algorithms. This description is executed in the A-COBOL language in machine-independent form.

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USSR UDC 8.74

BABENKO, L. P., DOVGOPOLAYA, L. I., TROKHIMENKO, V. S., USENKO, R. D., YUSHCHENKO, VR. I.

"Debugging Media in a Programming System"

V sb. <u>Teoriya yazykov i metody postroyeniya sistem programmir</u>. (Language Theory and Methods of Constructing Programming Systems—collection of works), Kiev-Alushta, 1972, pp 309-314 (from <u>RZh-Kibernetika</u>, No 12, Dec 72, Abstract No 12V486)

Translation: A study was made of means controlled by the user in the COBOL programming system for the Dnepr-21. In order to retain the general organization of the COBOL program the debugging instructions in the indicated system are in the form of an auxiliary division of the COBOL program, the so-called debugging section which is an instruction for the operations system with respect to the problem statement mode on the computer. The language of giving this instruction is similar with respect to form to the COBOL language and is based on its concept and terminology. All of the debugging operators in the COBOL-Dnepr-21 system are divided into the following categories: 1) the operator for initial running of the program; 2) the operators for interrupting the normal course of execution of the program on occurrence of certain situations which are provided for; 3) operators permitting additional information 1/2

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BABENKO, L. P., et al., <u>Teoriya yazykov i metody postroyeniya sistem programmir.</u>, Kiev-Alushta, 1972, pp 309-314

to be obtained on the process of execution of the program on occurrence of an interrupt situation or before beginning its execution; 4) operators permitting halting of execution of the program or continuation of it after an interrupt by transferring control to a section of the COBOL program. The syntax of the debugging section of the COBOL program is presented as an example.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

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UDC 911.3.616.9.576.895.42(42+57)

BABENKO, L. V., NAUMOV, R. L., USPENSKIY, I. V., MERINOV, V. A., RUBINA, M. A., VASIL'YEVA, I. S., IOFFE, I. D., OBLESOVA, L. N., and RAZUMOVA, I. V.

"A Biological Study of Ixodes Ticks -- Disease Vectors -- and a Scientific Study of Countermeasures in Natural Foci"

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich. med., 1970 (Proceedings on the Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine 1970 — collection of works), Moscow, 1970, pp 52-53 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No. 1.36.67)

Translation: This study has four objectives: a) study of the ecology and population biology of the prevalent Ixodes and Dermacentor tick species; b) complex study of biological laws in natural foci of tickborne encephalitis and in one focus of Asian tickborne rickettsiosis (in Krasnoyarskiy Kray); c) study and practice of countermeasures against tickborne encephalitis for residents of large, newly-constructed housing developments in the hill rayons of Krasnoyarskiy Kray; and d) study of the effect of pesticides on ticks (I. persulcatus, for example). A proposal is advanced for research on the 1/2

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BABENKO, L. V., et al, V sb. Materialy Nauchn. konterentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich, med., 1970 (Proceedings on the Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 52-53 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.67)

characteristics of the population biology, morphology, and physiology of ticks within various geographic conditions.

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CIA-RDP86-00513R002200230001-1" APPROVED FOR RELEASE: 08/09/2001

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UDC 621.382.2

BABSING, S.P., VELICHKO, B.V., DRYDC, I.M., MIKHAYLOVA, E.A., STRUKOV, I.A., ETKIN, V.S.

"Experimental Investigation Cf The Frequency Dependence Of The Impedance Cf A P-N Junction In A Side Range Cf Frequencies"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Gollection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 297-304 (from RZh--Elektroniks i yeye primeneniye, No 12, December 1970, Abstract No 12897)

Translation: An investigation is conducted of the frequency dependence of the impedence of a p-n junction in the 10--3600 MHz frequency range. The behavior is observed of such parameters of the p-n junction as total capacitance, conductance, and the Q-factor of the excess capacitance. A comparison is given of the experimental dependences with the frequency dependence of the computed diffusion conductivity of a p-n junction with a retarding field in the base. Conclusions are made with reference Abstract.

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UDC 621.375.82

BABENKO, V. A., ZEL'DOVICH, B. YA., MALYSHEV, V. I., and SYCHEV, A. A.

"Radiation Spectrum of Giant Laser Pulse With Allowance for Self-Frequency Modulation"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Noscow, "Sov. Radio," 1973, pp 19-24 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10E820 from authors' abstract)

Translation: The article deals with a theoretical consideration of the broadening of the spectrum of a giant laser pulse due to the dependence of the refractive index of the matrix of the active medium on the light intensity. A calculation is performed for the integral effect for the entire giant pulse, assuming that the initial radiation is a Gaussian random process. Experiments are performed, the results of which agree with the theoretical estimates. Bibliography with eight titles.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

USSR

UDC: 539.3:534.1

BABENKO, V. I.

"Criteria for Instability of Zero-Moment Conservative Envelopes"

4-Ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl. [Fourth All-Union Conference on Problems of Stability and Structural Mechanics, Abstracts of Reports -- Collection of Works], Moscow, 1972, pp 71-72 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12V301, by V. A. Shamina)

Translation: For a thin, elastic, strictly convex envelope, under the influence of conservative forces, a criterion of instability of the zeromoment equilibrium state is formulated as the inequality

$$[z^{2}+4K(T_{2}^{1}T_{1}^{2}-T_{1}^{1}T_{2}^{2})]^{1/2}-z\geq 2E\delta^{2}K[3(1-v^{2})]^{1/2}$$

Here Z is the normal surface load; T_{k}^{i} are the components of the force tensor of the stress state studied; K is the Gaussian curvature of the nondeformed middle surface, δ is the thickness of the envelope; E and ν are Young's modulus and Poisson's coefficient. The inequality presented is produced

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Babenko, V. I., 4-Ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl., Moscow, 1972, pp 71-72.

on the assumption that the forms of the middle surface before and after deformation are quite similar. Formulas are produced from the criterion formulated for the maximum critical loads.

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- 131 -

USSR

UDC: 621.375.82

BABENKO, V. P., MAKAROV, V. I., NAPERSTAK, Yu. A., RUBINCHIK, B. Ya.,

"A Laser apparatus With Freset Control for Cutting Materials"

Moscow, Kvant. elektronika--sbornik (Quantum Electronics--collection of works), No 1(13), "Sov. radio", 1973, pp 132-133 (From RZh-Fizika, No 8, Aug 73, abstract No 8D1174 by the authors)

Translation: An automatic apparatus has been developed for gas-laser cutting of materials. The unit includes a carbon dioxide laser with power of about 500 w and a series-produced coordinate indexer with preset control (EM-703). The basic parameters of the apparatus and results of technological tests are given.

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- 26 -

Instrumentation and Equipment

USSR

UDC 621.791.948+621.375.8.037: 681.326.3:62-41

TYCHINSKIY, V. P., Doctor of Technical Sciences, VASIL'YEV, K. V., Candidate of Technical Sciences, TROFIMOV, A. A., BABENKO, V. P., SUKHININ, G. K., YELISEYENKOV, V. I., Engineers, Research Institute for Gas Welding and Cutting Machinery

"Program-controlled Machine for Gas-laser Cutting of Sheet Materials"

Moscow, Syarochnoye Proizvodstvo, No 4, Apr 72, pp 52-53.

Abstract: The Institute has developed a machine for cutting of alley steels, titanium and other materials using carbon-dioxide lasers, allowing any contour to be cut in the tracking mode. Contour control of the machine is by a digital programmed device using punch tape. The machine has been tested using various materials including 1-10 mm sheets of low-carbon and alloy steels of various types. Good cutting accuracy has been achieved: parts have been cut from sheets up to 3 mm thick, with smooth, even edges, and very small zone of thermal effect near the cut. Cuts are very thin (a few tenths of a millimeter).

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USSR

UDC 533.697

BABENKO, V. V., and KOZLOV, L. F., Kiev

"Experimental Investigation of Hydrodynamic Stability on a Rigid and on Elastically Damping Surfaces"

Moscow, Izvestiya Akademii Nauk USSR, Mekhanika Zhidkosti i Gaza, No 1, Jan-Feb 73, pp 122-127

Abstract: Results are presented of an experimental investigation of the hydrodynamic stability in a water flow carried out by the tellurium method on a hydrodynamic stand of low turbulence. The developed method of determining neutral curves made it possible to investigate also the hydrodynamic stability of elastically damping surfaces. The neutral curves were plotted in traditional and in new coordinates. The neutral curves in coordinates of dimensionless frequency, wave number, and phase velocity at longitudinal streamlining of the rigid plate adequately conform with experimental and theoretical results of other authors. The measurements made at 0.32 mm vibration amplitude and turbulence less than 0.04% approved the method of experimental investigation, they complied best of all with calculations of S. F. Shen (J. Aer. Sci., 1954, Vol 21). Hydrodynamic stability investigations on three types of elastically demping surfaces show a form of neutral curves which is different 1/2

- 37 -

USSR

BABENKO, V. V., and KOZLOV, L. F., Izvestiya Akademii Nauk USSR, Mekhanika Zhidkosti i Gaza, No 1, Jan-Feb 73, pp 122-127

from the streamlining of a rigid surface. Four figures, twelve bibliographic references.

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USSR

UDC 532.526

BABENKO, V. V., and KOZLOV, L. F., Hydromechanics Institute, Academy of Sciences USSR

"Experimental Investigation of Hydrodynamic Stability of Laminar Boundary Layer With Water Flow Along Rigid Surface"

Kiev, Gidromekhanika, Akademiya Nauk Ukrainskoy SSR, No 21, 1972, pp 70-73

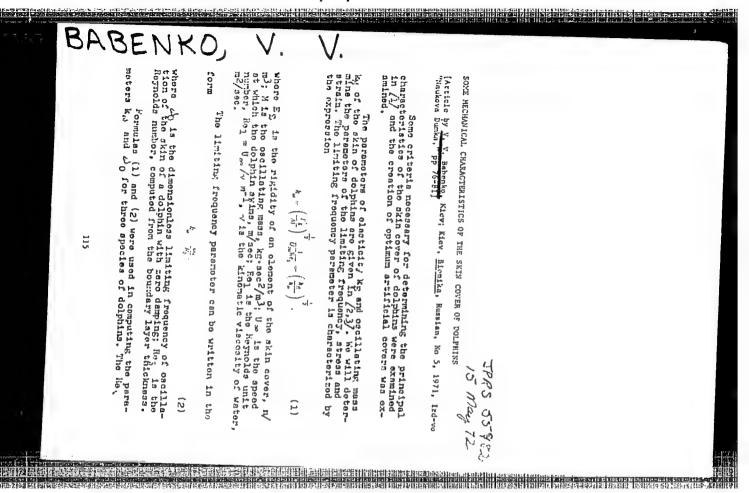
Abstract: Investigation was conducted of a flow through a pipe with low initial turbulence (0.03%). The turbulence was excited by a vibrator and recorded on film by means of electronic equipment.

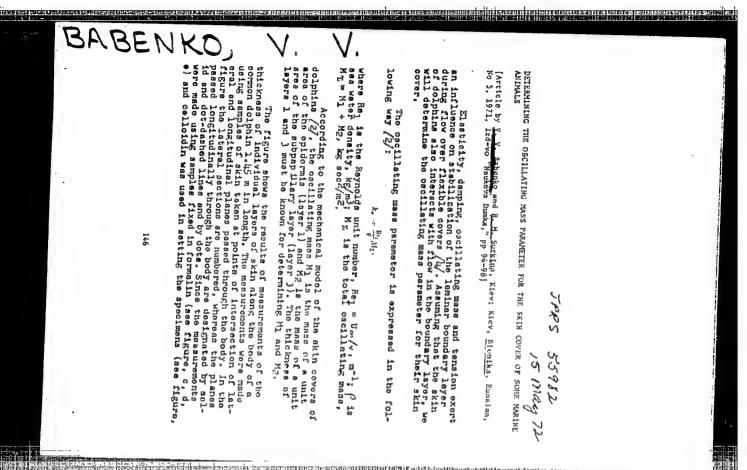
It has been established that exciting oscillations propagating into the unstable region increase in proportion to the exciting amplitude. The build-up starts at the neutral line and is maximum in the center of the unstable region. The neutral line obtained by varying the frequency of excitation agrees closely with the theoretical one.

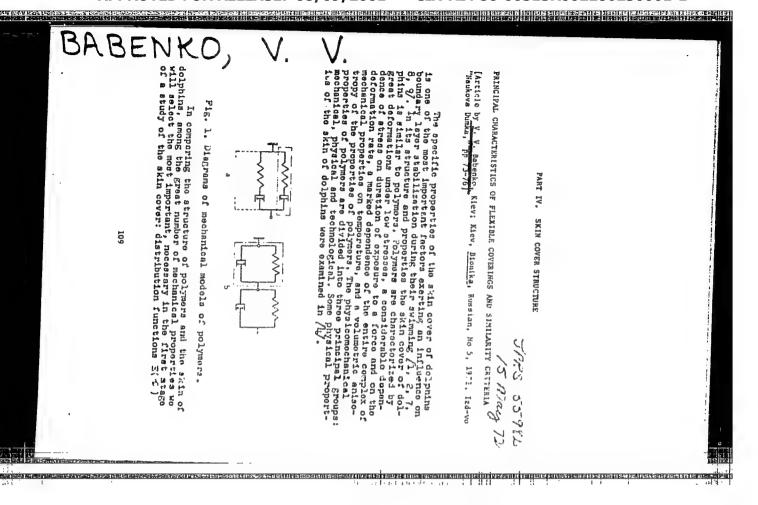
The turbulence amplitude is maximum at 15-30% of the boundary layer thickness.

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USSR



UDC 621.395.66

BONDARENKO, P. S., ROMANENKO, A. I., BABENKO, YE. YA. and TKACHENKO, N. D.

"Device for Control of the Reliability of Telegraph Information"

Mekhaniz. i avtomatiz. upr. Nauchno-proizv. sb. (Mechanization and Automation of Administration. Scientific-Industrial Collection), 1969, No 4, (46), pp 58-60 (from RZh-Elektrosvyaz', No 1, Jan 70, abstract No 1.64.221

Translation: A system is considered for transmission of telegraph information with the use of unit-type protection, based on the fact that monitoring information is determined as a code combination, the elements of which are added to the oddness sums modulo 2 or the elements for each path. The system under consideration passed tests in a system of information transmission from enterprises of the Ministry of Ferrous Metallurgy, Ukrainian SSR (MChM USSR) to the leading information computing center of the Ministry. B. B.

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Acc. Nr.: 180046033

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Ref. Code: Wh 0000

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UDC 621.395.66

BONDARENKO, P. S., ROMANENKO, A. I., BABENKO, YE. YA. and TKACHENKO,

"Device for Control of the Reliability of Telegraph Information"

Mekhaniz. i avtomatiz. upr. Nauchno-proizv. sb. (Mechanization and Automation of Administration, Scientific Industrial Collection), 1969, No 4, (46), pp 58-60 (from RZh-Elektrosvyaz', No 1, Jan 70, abstract No 1.64.221

Translation: A system is considered for transmission of telegraph information with the use of unit-type protection, based on the fact that monitoring information is determined as a code combination, the elements of which are added to the oddness sums modulo 2 or the elements for each path. The system under consideration passed tests in a system of information transmission from enterprises of the Ministry of Ferrous Metallurgy, Ukrainian SSR (MChM USSR) to the leading information computing center of the Ministry. B. B.

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USSR

SIGAL, I. YA., and BABENKO, YU. A.

"Toxic Emissions in the Atmosphere"

Kiev, Energetika i Elektrifikatsiya, No 4 (70), Jun/Jul 73, pp 6-8

Abstract: One of the most effective ways of reducing the air pollution is to substitute gas fuel for solid or oil fuel. It has been established that after such a change is made, the emissions into the atmosphere from a municipal power plant with boiler capacity of 22 t/hr are lowered on the average by a factor of five. At power stations with energy blocks of 300 Mv this decrease is about 50%. It is recommended to consider these findings in selection of fuels for the power stations.

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1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ANOMALOUS ANGULAR DISTRIBUTION OF FRAGMENTS FROM THE FISSION OF
RADIUM BY 14-16 MEV NEUTRONS -U-

AUTHOR-(05)-BABENKO, YU.A., NEMILOV, YU.A., PLESKACHEVSKIY, L.A., SELITSKIY, YU.A., FUNSHTEYN, V.B.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 1006-11

DATE PUBLISHED ---- 70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ANGULAR DISTRIBUTION, NUCLEAR FISSION, RADIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3008/0577

STEP NO--UR/0367/70/011/005/1006/1011

CIRC ACCESSION NO--APO137662

UNCLASSIFIED

ROTE TO SECURITY OF THE PROPERTY OF THE PROPER

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70 CIRC ACCESSION NO--APO137662 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FRAGMENT ANGULAR DISTRIBUTIONS FOR THE FISSION OF PRIME226 RA BY N WITH ENERGIES 12.6-19.5 MEV WERE MEASURED. AS THE SOURCE OF N, THE REACTIONS (D(D,N) PRIMES HE AND T(D,N) PRIME4 HE WERE USED. THE ANOMALOUS SHAPE OF THE DISTRIBUTION, MANIFESTING ITSELF AS A FRAGMENT YIELD AT AN ANGLE OF SIMILAR TO 60DEGREES AT E SUBN EQUALS 14.6-15.6 MEV, IS EXPLAINED AS DUE TO THE "CHANNEL" STRUCTURE OF THE FISSION BARRIER OF THE PRIMEZZ6 RA NUCLEI PRODUCED FROM PRIME 227 RA AFTER EVAPG. 2 N. THE FISSION BARRIER OF PRIME226 RA IS 7.0 PLUS OR MINUS 0.5 MEV. THE TOTAL CROSS SECTION VARIES SLIGHTLY FROM 21 TO 33 MB IN THE ENERGY INTERVAL E SUBN EQUALS 15.6-19 MEV. EXPTS. PERFORMED ON PRIME233 U GAVE A NEG. ANSWER TO THE QUESTION OF THE EXISTENCE OF ANOMALOUS ANGULAR DISTRIBUTIONS, FOR FISSION OF OTHER NUCLEI.

UNCLASSIFIED

USSR UDC 632.95

VASHKOV, V. I., BABENKO, Z. I., and PERMYAKOVA, N. M.

"Insecticidal Properties of Dilor"

Tr. VNII dezinfektsii i steriliz. (Works of the All Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 77-81 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18V421)

Translation: The results of experiments on studying the insecticidal activity of dilor by the method of enforced contact of insects with the surface of glass treated with a solution of dilor in acetone show that dilor is an insecticide equal in the strength of toxic effect to DDT and hexachlorocyclohexane on red cockroaches and bedbugs, and equivalent to DDT on houseflies. The minimum dose of dilor which ensures 100% destruction of lice with a one-hour exposure is 0.5 g/m^2 ; for 100% destruction of the tick Ixodes persulcatus, the dose is 1.4 g/m^2 . Heating the precipitated dilor for 2 hours at 60°C and exposure of the precipitate for 6 hours to ultraviolet rays (9000 luxes) causes almost no reduction in its toxicity for grain weevils. T. A. Belyayeva.

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USSR

BABENKO. Z. I., VOYTENKO, A. N., LINNIK, L. I., PERMYAKOVA, N. M., SERGEYEV, YE. V., Ukrainian Scientific Research Institute of Plant Protection, Kiev, Ukrainian Academy of Agricultural Sciences

"Study of the Acaricidal Properties of 1,1-Dipheny1-2,2,2-trichloro-ethanol"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 6, Jun 70, pp

Abstract: The compound 1,1-diphenyl-2,2,2-trichloroethanol (I) is an analogue of a known acaricide, kel'tan, a long lasting contact agent. The effect of (I) on the mites Tetranychus urticae and Tetranychus viennensis Zacher was studied under laboratory and field conditions, respectively. In laboratory experiments (I) was slightly less effective than kel'tan. The opposite held true for the field tests: 90% of the mites had died by the second day when treated with (I), but only 46% died in three days when treated with kel'tan. After 15 days of treatment the activity of both compounds equilibriated with the number of surviving mites remaining around 10%. Phytotoxic properties of both compounds were about the same.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

USSR

VDC 621.357.1.035.2.001.5

BABENKOV, YE. D.

"Performance of Electrolyzers with Charging Bipolar Electrodes"

Tr. VNII zh.-d. transp. (Collection of Works of All-Union Scientific Research Institute of Railroad Transportation), Vyp 468, 1972, pp 47-64 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23 (II), 1972, Abstract No 231203)

Translation: Performance features of the graphite and chip charging uniform and porous electrodes as function of geometric characteristics, the ratio of electroconducting liquid and solid phases, the electrochemical properties of charging materials, and the feeding regime with the initial reagents were studied. Requirements were worked out for the optimal conditions of charging and for the best design for such electrolyzers.

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1/2 016 UNCLASSIFIED PROCESSING DATE--20NDV70 -TITLE--CATALYTIC REDUCTION OF NITROBENZENE DERIVATIVES -U-

AUTHOR-(03)-SUKULSKIY, D.V., BABENKOVA, L.V., PGPOVA, N.M.

CCUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(6), 1299-310 (CHEM)

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS-NITROBENZENE, CLAY, CHEMICAL REDUCTION, HYDROGENATION, NICKEL, PLATINUM, CATALYST ACTIVITY

CENTROL MARKING--NO RESTRICTIONS

DOGUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3005/0216

STEP NO--UR/0020/70/191/006/1299/1301

CIRC ACCESSION NU--ATO132468

- UNCLASSIFILU ---

PROCESSING DATE--20NOV70 UNCLASSIFIED 016 2/2 CIRC ACCESSION NO--AT0132488 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. KINETIC DATA WERE SHOWN GRAPHICALLY FOR REDN. OF ARNO SUB2 ON NI-BENTONITE CLAY CATALYST USING FULLCWING AR: M.O SUB2 NC SUB6 H SUB4, M. HCOC SUB6 H SUB4, M. HOC SUB6 H SUB4. P.MEC SUB6 H SUB4. P.ETOC SUB6 H SUB4. P.HOC SUB6 H SUB4. CATALYSTS USED WERE NI-BENTONITE CLAY AND NI-CU-FE-BENTONITE CLAY. THE RATE OF HYDROGENATION WAS FOUND TO INCREASE WITH DECREASING VALUE OF THE CATALYST POTENTIAL VS. SCE, AND A LINEAR RELATION WAS FOUND BETWEEN THE SHIFT OF THE CATALYST POTENTIAL. CHARACTERISTIC OF RELATIVE ADSORPTION ABILITY OF THE VARIOUS NITRO COMPOS., AND THE REACTION RATE. THE SAME RELATIONSHIP WAS FOUND BETWEEN REACTION RATE COEFFS. AND THE HAMMETT SUBSTITUENTS CONSTS. IN THE SUBSTRATES. THE RESULTS INDICATE A HIGH ENERGY OF BUNDING OF THE ADSORBED H BY THE NI CATALYSTS ON THESE SUPPORTS, WHICH BRINGS SUCH CATALYSTS INTO THE AREA OF ACTION OF PT FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR. CATALYSTS.

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PROCESSING DATE--090CT70

TITLE-THE CONTEMPORARY STATE OF PROBLEMS OF HEMISPHERE DOMINANCY -U-

AUTHOR--BABENKOVA. S.V.

COUNTRY OF INFO-USSR

SOURCE-ZHURNAL NEVROPATOLUGII I PSIKHIATRII IMENI S. S. KORSAKOVA 1970, VOL 70, NR 4, PP 521-527 DATE PUBLISHED ---- 70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

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TOPIC TAGS-BRAIN, SPEECH, VISION

CONTROL MARKING-NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1988/1663

STEP NO--UR/0246/70/070/004/0521/0527

CIRC ACCESSION NO--APO106409

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

The contract of the contract o

UNCLASSIFIED PROCESSING DATE--090CT70 029 2/2 CIRC ACCESSION NO--AP0106409 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE AUTHOR ANALYSES THE LITERATURE AND PERSONAL DATA, WHERE IT IS ATTEMPTED TO SHOW THAT THE IDEA OF HEMISPHERE DOMINANCY AT THE PRESENT TIME DOES NOT REFLECT THE ACTUAL STATE OF THINGS. IT SHOULD BE SUBSTITUTED BY THE CONCEPT OF FUNCTIONAL ASYMMETRY. FUNCTIONAL HEMISPHERE SPECIALIZATION. IT HAS BEEN SHOWN ON UNE HAND, THAT THE DOMINANCY OF THE LEFT HEMISPHERE IN RELATION TO SPEECH MOTOR AND VISUAL FUNCTIONS IS RELATIVE, LIMITED. ON THE OTHER HAND, THE RIGHT HEMISPHERE IS DOMINANT IN RELATION TO THE GNOSIS OF ONE'S GWN BODY AND ENVIRONMENT, SOME TYPES OF PRAXIS, AND THE WORK OF THE LOCOMOTOR APPARATUS. THE FOCAL PATHOLOGY OF THE RIGHT BODY, CHANGED MENTAL FUNCTIONS, AUTOMATIZED MOVEMENTS) WHICH ARE TO THE SAME DEGREE SPECIFIC FOR DEXTRAL HEMISPHERE LESIONS, AS THE APHATICAL DISORDERS ARE SPECIFIC FOR THE SINISTRAL HEMISPHERE. THE AUTHORS COMES TO THE CONCLUSION THAT EACH HEMISPHERE IS DOMINANT IN ITS SPHERE OF THE PROCESS OF COGNITION AND REGULATING THE VITAL FUNCTIONS OF THE ORGANISM.

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Publications |

USSR

UDC 616.9-036.2-07(049.3)

BABENYSHEV. V. P., (Reviewer)

Vremennoye Nastavleniye Po Epizootologicheskomu obsledovaniyu v Prirodnykh Ochagakh Chumy Zakavkaz'ya (Provisional Instructions for Epizootological Studies in the Natural Plague Foci in the Transcaucasus), by Nayden, P. Ye. (Editor), Stavropol', 1971, 86 pp, 14 ill

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 6, 1973, pp 140-142

Abstract: The publication under review was an effort by a group of staff members of the Stavropol' Antiplague Institute, the Azerbaydzhan Antiplague Station, and the Armenian Antiplague Station to update previous publications on plague epizootics in the Transcaucasus, as well as to provide new insight into the methods and techniques of such investigations. Unfortunately, the book present a forum for opinionated discussions, and presentation of personal observations of the participants as proven facts. The book contains numerous factual errors of both biological and geographical nature. In addition, the authors have taken it upon themselves to supplant accepted terminologies and expressions with those of their own creation. This publication presents evidence in support of the orders of the Ministry

USSR

BABENYSHEV, V. P., (Reviewer), Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 6, 1973, pp 140-142

of Health of the USSR which provides directives for the publication of instructional manuals, and forbids the publication of such material without prior approval by the Ministry.

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- 83 -

USSR

UDC 621.396.6-181.48

BUTKOV, YU. G. and BABER, A. I.

"Layout Density of the Elements of Large Integrated Circuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronics Technology. Collected Scientific-Technical Works. Microelectronics), 1972, vyp.1(35), pp 50-53 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V230)

Translation: Wethodology is proposed for determining the possible degree of integration of elements and couplings on the plate of a monolithic, large integrated circuit with preferred connection orientation. Resume.

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- 97 -

USSR

UDC 612.4

BABERE, G. M., and SHVAREVA, N. V.

"The Functional State of the Hypothalamus-Hypophysis Complex Upon Immunization"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Biologicheskikh i Khimicheskikh Nauk, No 4, 1971, pp 50-51

Abstract: Rats were immunized with daily intraperitoneal injections of adsorbed tetravaccine (containing the antigens of typhoid, paratyphoid A and B and also tetanus toxoid) in the amount of 0.5 ml/kg. The animals were sacrificed on the 7th, 10th, and 30th day after the first administration of the vaccine. The effects of immunization on the hypothalamus-hypophysis system were studied by histochemical determinations of neurosecretion in the supraoptic nucleus and both parts of the neurohypophysis and by determination of glucoproteins in the anterior hypophysis. The number of basophils in sections of the middle part of the anterior hypophysis was counted. On the 7th day after immunization, the neurosecretion adenohypophysis was involved in the response to immunization; the number of basophils in it increased considerably. On the 30th day the synthesis

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BABERE, G. M., and SHVAREVA, N. V., Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Biologicheskikh i Khimicheskikh Nauk, No 4, 1971, pp 50-51

of neurosecreted substance returned to normal, while dysfunction phenomena remained in the adenohypophysis. Correlation of the data obtained with earlier results on the effect of immunization on the thyroid gland, in which hyperplasia was produced, indicated that the neurosecretion of the supraoptic nucleus participated in altering the functioning of the thyroid gland in immunization, and that the effect of the neurosecretion was transmitted over the adenohypophysis.

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- 43 -

Acc. Nr: Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code:

102491q Study of iron oxidation in cummingtonite by the γ-resonance (Moessbauer) spectroscopic method. Ershova, Z. P.; Babeshkin, A. M.; Perfil'ev, Yu. D. (Inst. Geol. Rud. Mestoroxid.; Petrogr., Mineral. Geokhim., Moscow, USSR). Geokhimiya 1970, (2), 252-6 (Russ). The Fe^{‡+} oxidn. in amphibolite was studied with cummingtonite samples from Krivoi Rog by detn. of chem. and optical characteristics and γ-resonance by the Moessbauer method. The areas of Moessbauer spectra were measured graphically. The amt. of Fe²⁺ in cummingtonite, detd. from the spectral areas, agreed well with the chem. detns. The value of the peak area, corresponding to Fe³⁺ in the M₄ position, remained unchanged during heating of cummingtonite under dynamic conditions up to the solid phase transformation at 900° accompanied by the disintegration of mineral structure and formation of new phases: magnesioferrite (MgFe₃O₄) and hematite. This substantiated the S. Ghose theory (1961) on the stronger M-O bond in the position M₄. Oxidn. of Fe in cummingtonite during heating >300° occurred at the expense of Fe³⁺ in the M₁, M₂, and M₃ positions. The degree of cummingtonite oxidn. at various temps. can be calcd. from the value of the spectral area.

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REEL/FRAME 19791897

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230001-1"

1/2 020 UNCLASSIFIED PROCESSING DATE--02JCTTO
SHIFTS IN MCESSBAUER SPECTRA -U-

AUTHOR-(03)-YEFREMOV, E.N., BABESHKIN, A.M., NESMEYANOV, A.N.

COUNTRY OF INFO--USSR

SCURCE--VESTN. MCSK. UNIV. KHIM. 1970, 11(1), 46-8

DATE PUBLISHED----70

SUBJECT AREAS -- MATERIALS

TOPIC TAGS--ELECTRON DENSITY, ISOMER, ELECTRON STRUCTURE, RARE EARTH METAL, ZINC COMPLEX, NICKEL COMPLEX, ALUMINUM COMPLEX, COPPER COMPLEX, DYSPHOSIUM, EUROPIUM, GALLIUM, RHODIUM, PALLADIUM, MOSSBAUR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED PROXY FEEL/FRAME--1989/0610

STEP NO--UR/0189/70/011/001/0046/0048

CIRC ACCESSION NO--APO107207

UNCLASSIFIED

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CIRC ACCESSION NU--APO107207
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ISOMER SHIFTS AND ELECTRON DS. ARE TABULATED FOR THE INTERMETALLIC COMPDS. OF DY AND EU WITH GA, CU, PT, AL, RH, NI, PD, AND ZN. THE VALENCE OF EU DEPENDED ON THE POPULATION OF THE D LEVEL IN THE TRANSITION METALS WHICH WERE THE 2ND CONSTITUENT OF THE LAVES PHASES. THE ELECTRON D. AND THE VALENCE STATE FOR A RARE EARTH METAL DEPENDS ON THE ELECTRONIC STRUCTURE OF THE 2ND COMPONENT.

UNCLASSIFIED PROCESSING DATE--020C170
TITLE--CHEMICAL EFFECTS OF ELECTRON CAPTURE BY CERTAIN IDDIVE-125
COMPOUNDS STUDIED BY THE MOSSBAUER EFFECT ON TELLURIUM-125 -UAUTHUR-(04)-BABESHKIN, A.M., LAMYKIN, E.V., LEBEDEV, V.A., NESMEYANOV,

COUNTRY OF INFO-USSR

SGURCE--VESTN. MUSK. UNIV. KHIM. 1970, 11(1), 117-18

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTRUSCOPIC ANALYSIS, MOSSBAUER EFFECT, TELLURIUM, IDDINE, FROZEN FLOW, NITRIC ACID, AQUEOUS SOLUTION, ELECTRON CAPTURE

CONTROL MARKING--NO RESTRICTIONS

ODCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1989/0615

STEP NO--UR/0189/79/011/001/0117/0118

CIRC ACCESSION NO--APO107212

UNCLASSIFIED.

2/2 037 UNCLASSIFIED PROCESSING DATE--020CT70 CIRC ACCESSION NO--APO107212 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE MOESSBAUER EFFECT OF PRIME125 TE. WITH THE ABSORBER BETA PRIME125 TED SUB3 AND THE SOURCE PRIME125 I, IN VARIOUS CHEM. FORMS (NAI, NAI.2H SUB2 0, KIO SUB3, NA SUB3 H SUB2 ID SUB6, FROZEN SOLNS. OF NAI IN H SUB2 D, AND OF NA SUB3 H SUB210 SUB6 IN 0.1 N HNO SUB3). FOR NAI A SINGLET LINE OF REGULAR SHAPE AND WITHOUT BROADENING WAS FOUND. FOR NAI-2H SUB2 J AND THE FROZEN SULN. OF NAI IN H SUB2 O, A SPECTRUM WITH QUADRUPOLE SPLITTING WAS OBTAINED, DELTA IS GREATER THAN 10 MM-SEC. FOR KIC SUB3 THE SPECTRUM WAS BROADENED GREATLY, ASYM., AND SEPD. INTO 2 SINGLETS WITH AN INTENSITY RATIO OF SIMILAR TO ONE HALF, INDICATING THAT, AFTER ELECTRON CAPTURE IN KIO SUB3. THE TE IS STABILIZED IN MORE THAN 1 FORM. FOR THE FRUZEN SOLN. OF NA SUB2 H SUB2 IO SUB6 IN 0.1 N HNO SUB3, THE SPECTRUM WAS GREATLY BROADENED AND ASYM. DUE TO THE PRESENCE OF MORE THAN 1 STABILIZED FORM OF TE.

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USSR

ANZON, Z. V., et al, Institute of Nuclear Physics, Academy of Sciences, Kazakh SSR, Alma-Ata; BOZOKI, G., et al, Central Research Institute of Physics, Budapest; DALKHAZHAV, N., et al, High-Energy Laboratory, Joint Institute of Nuclear Research, Dubna; BABETSKIY, Ya., et al, Laboratory of High-Energy Physics, Institute of Nuclear Research, Krakow; ZHDANOV, G. B., et al, Physics Institute imeni P. M. Lebedev of the Academy of Sciences, USSR, Moscow; ALEKSEYEVA, K. I., Scientific Research Institute of Nuclear Physics, Moscow State University, Moscow; CHERNEV, Kh., TODOROV, P. T., Institute of Nuclear Physics, Bulgarian Academy of Sciences, Sofia; AZIMOV, S. A., et al, Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR, Tashkent; CHADRAA, V., SHARKHI, D., TUVDENDORZH, D., Institute of Physics and Mathematics, Mongolian Academy of Sciences, Ulan-Bator

"General Characteristics of Pion-Nucleon Interactions in a Nuclear Emulsion at Energies of 45 and 60 Gigaelectron-Volts"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 9, 1970, pp 1934-1937

Abstract: In the paper are presented the general characteristics of ion-nucleon interactions in nuclear emulsions irradiated on the accelerator in Serpukhov. The preliminary experimental data, obtained in various groups coordinated by the 1/2

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ANZON, Z. V., et al. Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 9, 1970, pp 1934-1937

Photoemulsion Committee of the Joint Institute of Nuclear Research, were presented simultaneously to the International Conference on the Physics of Elementary Particles in Lund and at the 11th International Conference on Cosmic Rays in Budapest. In the present paper are presented results obtained on the basis of extensive statistical material. Approximately 1500 \mathbb{M} -N-interactions at energies of 60 and 45 gigaelectron-volts are analyzed. The free paths of inelastic interaction are 43.7 \pm 0.5 and 42.8 \pm 1.2 cm long respectively. The average multiplicity for \mathbb{M} -p-interactions at 60 gigaelectron-volts equals 6.4 \pm 0.3. 4 figures, 6 bibliographic entries.

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- 126 -

UDC 621.3.035

GOYAN, YE. B., MINDYUK, A. K., BABEY, YU. I., Physical-Mechanical Institute of the Ukrainian SSR Academy of Sciences. L vov

"Electrochemical Cell for Studying the Electrode Processes in Acids at Elevated Temperatures"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 114-116

Abstract: An electrochemical cell is described which is used to study the electrode processes taking place from metal surfaces in acids at elevated temperatures (20-90° C). The schematics of a two-channel heat regulator and a device for recording the polarization curves under galvanostatic and potentiostatic conditions are presented. A Luggin capillary with an inside diameter of 1-1.5 mm is placed at a distance of 1-1.5 mm from the investigated electrode, and the electrolytic bridge of the auxiliary electrode (inside diameter 4.5 mm) is at a distance of 15 mm. The distances of the electrolytic switches from the electrodes are constant since the switches are soldered to the cell. The specimen is placed in a teflon holder screwed into a plug. Thus, the specimen can be placed in a given position for each measurement. For thermostating, a two-channel heat regulator has been developed which permits the temperature of the investigated solution, the comparison electrode and the auxiliary electrode to be regulated with an accuracy of +0.3° C.

USSR

UDC 620.194.2

KARPENKO, G. V., ZAGORUYKO, R. F. and BAREY, YU. I. Physics and Mechanics Institute, Academy of Sciences Ukrainian SSR, L'vov and the Novyy Rozdol Mining and Chemical Combine

"Effect of Heat Treatment on the Resistance of Steel Khl8N10T to Corrosion Cracking in a Sulfur Pulp "

L'vov Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 6, Nov-Dec 71, PP 73-75

Abstract: To study the resistance of stainless steel Khlaklot to stress corrosion cracking, samples of the steel were subjected to the following heat treatment: heated to 1100°C and water quenched; annealed at 820°C for two hours and furnace cooled; normalized at 820°C for two hours and air cooled. The samples were then placed in the sulfur pulp under 45 kg/ms? of stress. In as-supplied sample was also tested (not heat treated). The tests showed that the assupplied and quenched samples suffered severe corrosive attack and suffered brittle failure after 70 hours of testing. The ennealed and non-plized corroled did not fracture even after 500 hours of testing. 3 figures, 3 hibliographical references.

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UDC: 620.178.162

BABEY, YU. I., GOLURETS, V. M., VYGOVSKIY, I. P., RYABOV, B. F., and GNATYSHAK, N. N.

"Effect of White Layer on Wear Resistance of 50% Steel"

Kiev, Fiziko-Khimicheskaya Makhanika Materialov, Vol 7, No 5, 1971, pp 7-10

Abstract: An experimental investigation of the effect of white layer on the wear resistance of 50X(0.49% C, 0.21% Si, 0.65% En; 1% Cr, 0.24% Ni) steel was conducted.

The white layer was formed by turning the specimen journal ring on the lath, with 88 meter/min cutting speed and 0.15 mm depth of cut, or by means of mechanical-ultrasonic treatment.

Test showed that the year resistance of the specimens with white layer was equal to the ones, which were quenched at 850°C and drawn at 180°C. The wear of these specimens was about one third of the wear of unimproved specimens. The wear of the bronze and steel bushings rubbing against these specimens was reduced by about the same amount.

The white layer is formed by quenching and drawing due to the heat generated by the cutting tool.

The microraligraphic spectral analysis showed that the content of curbon,

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BAREY, YU, I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 5, 1971, pp 7-10

chrome and other carbide-forming elements is higher in the white layer and lower in the sublayer than in the original metal.

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UDC 620.194:669.15

ZAGORUYKO, R. F., BABEY, Yu. I., KARPENKO, G. V., Physicomechanical Institute, Academy of Sciences, Ukrainian SSR, L'vov; Chemical Mining Combine, Novyy Rozdol

"The Influence of Rolling on the Resistance of Steel Khl8N10T to Corrosion Cracking in Sulfur Pulp"

Kiev, Fiziko-Knimicheskaya Mekhanika Materialov, Vol 7, No 4, 1971, pp 107-

Abstract: Parts of machines and mechanisms working under conditions of sulfur mining are made of stainless steels of the type Knl8Nl0T. Steels of this class at delivery are vulnerable to corrosive cracking in a sulfur pulp. The question of increasing the resistance of steel to corrosive cracking in such a modium has been insufficiently studied up to now, and is almost not at all reflected in the literature. An investigation is made in this article concerning the influence of the increasing the resistance of steel KhldNlOT to corrosive cracking under the indicated conditions by rolling with rollers in the state of delivery. Experiments showed that in pure sulfur the initial samples do not crack at all. The surface of the samples is covered with a dense film of grayish color. No signs of corrosive cracking of the surface

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USSR

ZAGORUYKO, R. F., et al, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 4, 1971, pp 107-108

layer nor of cracks are detected. In a sulfur pulp with a 30% aqueous solution of MgCl₂, the steel undergoes more intensive cracking than in 30% MgCl₂. The origination of cracks and their development in steel Khl8Nl0T in testing for corrosion cracking in sulfur pulp may be explained from the point of view of adsorption-electrochemical theory, where the essential part is played by adsorption, anode and cathode processes. During testing in sulfur pulp, hydrogen sulfide is formed in the medium, and the diffusion of hydrogen into the metal is entirely probable. Experiments have shown that rolling by rollers effectively increases the resistance of steel to corrosion cracking, the resistance of the steel to corrosion cracking by rolling is caused by the favorable texture of the metal and the positive influence of the residual compression stresses in the surface layers of the samples. 4 figures.

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- 76 -

USSR

UDC 621.81:621.78

VORONINA, L. V., SHPEYZMAN, V. M., BABEY, YU. I., and VEYNGARTEN, A. M.

"Influence of Surface Hardening on Properties of Structural Steels"

Sudostroyeniye, No 2, Feb 71, pp 47-53

Abstract: Studies were performed to determine the influence of the form of microirregularities on the physical properties of surface-hardened steel specimens. Specimens of type 20 steel and type 12 KhN3A steel were subjected to carburizing with surface rolling, while specimens of type 40 Kh steel were subjected to induction hardening. Microhardness and surface smoothness of the specimens were measured. Carburized type 20 steel was found to have a maximum microhardness of about 900 kg/mm² at 0.1-0.3 mm from the surface. Surface rolling was found to increase surface smoothness, increasing the radius of curvature of peaks and hollows, thus improving the operational properties of the metal. Fatigue tests were also performed in air and in a 3% aqueous solution of sodium chloride. The surface rolling increased

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VORONINA, L. V., et al., Sudostroyeniye, No 2, Feb 71, pp 47-53

fatigue strength, particularly in the salt solution. Type 20 steel carburized with subsequent surface rolling was found to be equal to alloy steels in fatigue strength. The fatigue strength of type 40 Kh steel was increased by almost 50% by induction hardening. The hardening processes were also found to decrease the coefficient of friction of the metal surfaces. Corrosion resistance was little changed by the treatment, however.

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1/3 042 UNCLASSIFIED PROCESSING DATE--1152P70
TITLE--EFFECT OF ULTRASONIC TREATMENT ON THE PHYSICOMECHANICAL PROPERTIES
OF SOME PRECISION ALLOYS -U-

AUTHOR--BABEY, YU.I., YAREMKEVICH, S.K., SHULGA, N.G., VYGOVSKIY, I.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 516), 656-60

DATE PUBLISHED ---- 70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MECHANICAL PROPERTY, ULTRASONIC EFFECT, METAL INTERNAL FRICTION, MAGNETIC PROPERTY, IRON ALLOY, NICKEL ALLOY, MAGNETIC MATERIAL, ALUMINUM ALLOY, COBALT ALLOY, THERMOMAGNETIC EFFECT, PRECISION ALLOY, MAGNETIC FIELD, DISPERSION HARDENING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1938/0661

STEP NO--UR/0369/70/005/006/0556/0660

CIRC ACCESSION NO--AP0105639

HMCLASSIFIED

2/3 042 UNCLASSIFIED PROCESSING DATE--11SEP70 CIRC ACCESSION NO--APO105639 ABSTRACT/EXTRACT--(U) GP-0+ ABSTRACT. ELEVEN DISPERSION HARDENED. PRECISION ALLOYS FE-NI-AL-CO (RANGES NI 13.5-19.6, AL 7.0-12.27, CO 12.0-36.5, SI 0.0-0.5, TI 0.24-7.0 OR NB 0.5-0.8 WT. PERCENT, FE REST) WERE STUDIED AS TO THE EFFECT OF ULTRASOUND ON PROPERTIES AND STRUCTURE. ALL SPECIMENS WERE HEATED TO 1250-SODEGREES. HELD FOR 15-20 MIN. AND COOLED TOGETHER WITH THE FURNACE AT ZODEGREES PER HR. THE THERMOMAGNETIC TREATMENT WAS CARRIED OUT BY HEATING IN A BACL SUB2 BATH AT 800-40DEGREES FOR 10 MIN. FURTHER HEATING ALSO IN BACK SUB2 AT 1280DEGREES FOR 10-15 MIN COOLING IN LOWER TEMP. RANGE AT THE CRIT. RATE 40-60DEGREES PER MIN IN A MAGNETIC FIELD. BEFORE THE ULTRASONIC TREATMENT THE FOLLOWING ALTERNATIVE THERMAL TREATMENTS WEFF APPLIED: (1) HEATING TO 1250-80DEGREES, COOLING IN THE LOWER TEMP. RANGE (400-850DEGREES) AT 40-60DEGREES PER MIN AND TEMPERING AT 600DEGREES, (2) STEPWISE HEATING AND COOLING AT CRIT. FATE FROM 1280DEGREES IN 4 MAGNETIC FIELD, (3) THE ABOVE MENTIONED THERMOMAGNETIC TREATMENT WITH TEMPERING FOR 4 HR AT 600DEGREES. AND (4) STEPWISE HEATING AND COOLING WITH CRIT. RATE IN MAGNETIC FIELD (WITHIN THE REGION OF SOLID SOLY.) WHILE APPLYING ULTRASOUND DURING TEMPERING AT 600DEGREES WITH VARYING TIME PERIODS. THE IRRADN. WITH ULTRASOUND WAS CARRIED OUT AT 18-20 KHZ IN A MAGNETIC FIELD OF 1500-2000 DE. AFTERWARDS, THE MICROSTRUCTURE, MAGNETIC PROPERTIES, SP. ELEC. RESISTANCE, THERMAL EXPANSION. MICROHARDNESS, INTERNAL FRICTION, HEAT COND., AND YOUNG MODULUS WERE DETD. THE ULTRASPUND AFTER TREATMENTS (1) AND (3) HAD NO EFFECT. WHILE TREATMENT (2) AND ULTRASOUND HAD A WEAK EFFECT ON MAGNETIC PROPERTIES.

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3/3 042 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--APO105639
ABSTRACT/EXTRACT--TREATMENT (4) WAS MORE EFFECTIVE IN INCREASING THE
COERCIVE FORCE AND MAX. MAGNETIC ENERGY BY 25-30PERCENT: HJWEVER, WITH 2
ALLOYS (CONTG. CO 24 AND 35PERCENT) THE MAGNETIC ENERGY AND RESIDUAL
INDUCTION DECREASED BY 20-5PERCENT, (WHICH IS EXPLAINED BY THE
DISINTEGRATION OF SINGLE DOMAIN STRUCTURE AND ANISOTROPY). THE FAVORABLE
ACTION OF ULTRASOUND ON THE OTHER ALLOYS IS EXPLAINED BY THE CYCLIC
DEFORMATION OF CRYST. LATTICE, WHICH FACILITATES DIFFUSION: WHILE
ACCELERATING THE FORMATION OF SUBMICROSCOPIC PHASES FROM THE SOLIO
SOLN., THE ULTRASOUND HAD NO EFFECT ON THE COAGULATION RATE.

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UNCLASSIFIED PROCESSING DATE--27MOV70 TITLE--EFFECT OF A THREADED SECTION AND THE METHOD OF PRODUCING IT ON THE RESISTANCE OF , CARBON, STEEL SAMPLES TO CORROSION CRACKING -U-AUTHOR-(03)-DUTSYAK, Z.G., KHITARISHVILI, M.G., BABEY, YU.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (1), 112-113

DATE PUBLISHED ---- 70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CORROSION GRACKING, CARBON STEEL, AMMONIUM NITRATE, STRESS ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3003/0218

STEP NU--UR/0369/70/006/001/0112/0113

CIRC ACCESSION NO--APO129474

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV7O CIRC ACCESSION NO--APO129474

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE RESISTANCE OF C STEEL (ST. 45)

SAMPLES TO CORROSION CRACKING IN A BOILING NH SUB4 NO SUB3 SOLUTION WAS STUDIED AS A FUNCTION OF THE TYPE OF STRESS RAISER INCORPORATED IN THE SAMPLE (SCREW THREADS, GROOVES, ETC.) AND THE MANNER OF PRODUCING SUCH STRESS CONCENTRATIONS. SAMPLES WITH CUT SCREW THREADS HAVE A LOWER RESISTANCE TO CORROSION CRACKING THAN THOSE CONTG. A GROUND THREAD. THE DIFFERENCE BETWEEN GRINDING AND MACHINING WITH A STEEL TOOL WAS GREATEST IN THE CASE OF A SINGLE GROOVE AND LEAST IN THAT OF A COMPLETE THREAD, THERE BEING A CERTAIN "AVERAGING" EFFECT IN THE LATTER CASE.

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1/2 032 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MECHANISM OF THE WORK HARDENING OF HARDENED STEEL DURING DEFORMATION AGING -U-

AUTHOR-(03)-BABEY YULL., MOISEYEV, R.G., KUKLYAK, M.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-MEKH. MATER. 1970, 6(1), 100-2

DATE PUBLISHED ---- 70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL AGING, ALLOY DESIGNATION, CHROMIUM STEEL, ALLOY COMPOSITION, IMPACT STRENGTH, METAL INTERNAL FRICTION, CYCLIC ENDURANCE LIMIT, TORSION STRESS, METAL DEFORMATION/(U)40KH CHROMIUM STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT GLASS--UNGLASSIFIED PROXY REEL/FRAME--3001/0331

STEP NO--UR/0369/70/006/001/0100/0102

CIRC ACCESSION NO--APOL26087

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032 UNCLASSIFIED PROCESSING DATE--27NOV70 CIRC ACCESSION NO--APO126087 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL 40KH (C 0.36, MN 0.7, SI 0.24, S 0.024, P 0.018, CR 0.90, AND NI 0.14 WT PERCENT) AFTER QUENCHING IN OIL FROM 850DEGREES AND TEMPERING FOR 2 HR AT 180DEGREES, WAS DEFORMED BY TORSION (0-4PERCENT) AT 8-10DEGREES-MIN, HELD IN THE STRESSED STATE FOR 5-7 MIN, AND UNLOADED AT THE SAME RATE. DEFORMED SPECIMENS WERE AGED FOR 2 HR AT LOODEGREES, AND AFTERWARDS THE IMPACT STRENGTH, INTERNAL FRICTION, AND ENDURANCE WERE DETD. THESE PROPERTIES WERE ALL INCREASED WITH DEFORMATION DEGREE UP TO 2DEGREES, AND WITH LARGER DEFORMATION DEGREES THESE PROPERTIES DECREASED, TO INITIAL OR BELOW INITIAL VALUES. TURSIONAL DEFORMATION WITH SUBSEQUENT AGING CAUSED THE FORMATION OF CONSIDERABLE RESIDUAL STRESSES (150-250 KG-MM PRIMEZ) IN SURFACE LAYERS OF TESTED SPECIMENS, WHICH CONTRIBUTED TO THE INCREASE OF CYCLIC STRENGTH OF DEFORMED AND AGED STEEL. FACILITY: FIZ.-MEKH. INST., LVOY, USSR.

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1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ON THE ADSORPTION CHARACTERISTICS OF METALS -U-

AUTHOR-(03)-MINDYUK, A.K., BABEY, YU.I., KARPENKO, G.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (1), 97-100

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, ELECTRON STRUCTURE, METAL SURFACE PROPERTY, CHEMISORPTION, IRON, MERCURY, ELECTROLYTE, SODIUM HYDROXIDE, HYDROCHLORIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3002/1680

STEP NO--UR/0369/70/005/001/0097/0100

CIRC ACCESSION NO--APO129050

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV7O CIRC ACCESSION NO--APO129050

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATIONSHIP BETWEEN THE ELECTRON STRUCTURE AND ADSORPTION CHARACTERISTICS OF METALS IS DISCUSSED IN THE LIGHT OF ACCUMULATED THEUREFICAL AND EXPERIMENTAL DATA. DEPENDING ON THE NATURE OF THE METAL (WHETHER IT IS A DOMOR OR AN ACCEPTOR OF ELECTRONS, ETC.), ADSORPTION MAY TAKE PLACE IN SEVERAL DIFFERENT WAYS, E.G. THE ELECTRONS OF THE ADSORBED PARTICLES MAY OR MAY NOT BE LOCALIZED BY THE IONS OF THE METALLIC LATTICE (STRONG AND WEAK CHEMISORPTION, RESP.). PRACTICAL EXAMPLES ARE GIVEN FOR FE AND HG IN RELATION TO VARIOUS ELECTROLYTES (NAOH, HCL, ETC.).

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UDC 669.14.018.44:539.4

BABICH, B. N., BULYGIN, I. P., ZHUKOV, N. D., KRIVENKO, M. P., and PARFEHOVA, N. I. All-Union Scientific Research Institute of Aviation Materials (Moscow)

"The High-Temperature Strength of Dispersion-Hardening Composition Alloys Potentially Suitable for Use in Engines"

Kiev, Problemy Prochnosti, No 11, Vol 73, pp 73-77

Abstract: An investigation is made of the high-temperature strength of the nickel-based dispersion-hardened alloys VDU-1 and VDU-2, hardened by finely dispersed, uniformly distributed particles of high-melting oxides of the ThO2 type in the amount of 2-3% by weight. A study was made of the strength of semifinished products in the form of rods 6-12 mm in diameter and sheets 0.8-1.2 mm in thickness, obtained from powders of the components via shaping, baking, and hot extrusion. Results are presented of an investigation of the short- and long-term strength, the creep, fatigue, and heat resistance of the alloys to establish their suitability for use in gas-turbine engines. An analysis was made of such strength features of these alloys as the nature of the temperature-indicators, the sensitivity to loading instability, etc. in comparison to the strength properties of series-produced highly heat-resistant alloys. The

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BABICH, B. N., et al., Problemy Prochnosti, No 11, Vol 73, pp 73-77

obtained results demonstrate the fact that with regard to their high-temperature strength, dispersion-hardened alloys are potentially suitable for use in gasturbine engines. 8 figures. 2 tables. 5 references.

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UDC 621.762.1.01.669. 18.95

PORTNOY, K. I., GOROBETS, B. R., ROMANOVICH, I. V., and BABICH, B. N., All-Union Scientific Research Institute of Aviation Faterials

"Relation of Precipitation-Hardened Nickel Heat Resistance to Structure Parameters"

Kiev, Poroshkovaya Metallurgiya, No 1, Jan 74, pr 96-100

Abstract: In conjunction with the fact that precipitation-hardened nickel alloys VDU-1 and VDU-2 have a different level of heat resistance despite identical conditions of heat treating, a study was conducted on the structure of these alloys subjected to the same treatment, which differed in dispersity of the hardening phase in the amount of 2.5 vol %. Experiments confirmed a linear relationship of long-time strength to inverse magnitude of mean interparticle distance. It was also determined that there is a linear relationship between long-time strength to relative volume percentage of "coarse" dispersed particles. These results confirmed the hypothesis that the rise in strength increases with temperature due to the unchanged shear modulus with increased temperature and that the number of active slip systems is decreased with increased temperature, which in turn is the result

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PORTNOY, K. I., et al., Poroshkovaya Metallurgiya, No 1, Jan 74, pp 96-100

of the role of be dispersed hardening particles which hinder the movement of mobile dislocations. Four figures, one table, nine bibliographic references.

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- 33 --

USSR UDC: 669.71

PORTNOY, K. I., BABICH, B. N., ROMANOVICH, I. V., ROMASHOV, V. M., Moscow

"The Growth of Particles of Hardening Phases in Processes Producing Dispersion Hardened Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov [The Physics and Chemistry of Materials Processing], No 6, Nov-Dec 73, pp 99-103.

Abstract: X-ray and electron microscope methods are used to determine the mean diameter of particles of the hardening phase in an alloy of nickel with three vol. % hafnium dioxide during stages of its production from an initial powder mixture of oxides to a compact deformed bar. The greatest growth of the mean particle diameter of the hardening phase is observed during the operations of sintering and hot extrusion. The main reason for enlargement of particles in processes involved in producing the dispersion hardened alloy is the unevenness of the distribution, allowing direct contact between particles. The electron microscope method is recommended for determination of the mean diameters of hardening-phase particles in a dispersion hardened alloy, since it gives more reliable information than the x-ray method.

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UDC 621.762:669.245

BABICH, B. N., BERESTEN', N. Ye., LYUKEVICH, V. I., ROMANOVICH, I. V., TIMOFEYEVA, N. I.

"Influence of Distribution of Hardening Phase Particles in Powders on Thermal Stability of Dispersion-Hardened Nickel"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 25-30.

Abstract: This article studies the structural stability and strength properties of compositions produced of powders made by various methods providing near-identical hardening phase particle dimensions but different distributions of these particles in the matrix. It was found that achievement in initial powders of the most even possible distribution of ultrafine particles of the hardening phase assures thermal stability of dispersion-hardened nickel. The level of high-temperature properties of dispersion-hardened nickel depends on the presence of a certain quantity of oriented recrystallization areas in the structure with total absence of equiaxial grains. Unevenness of particle distribution of the hardening phase particles in the initial powders causes an increase in the mean particle size when the compact material is produced and a change in the nature of recrystallization, with the formation of equiaxial grains. The tests were based on nickel powder with 2% hafnium dioxide. The powders were produced by carbonate precipitation of nitrate solutions and evaporation concentration. Following hot extrusion 1/2

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UDC 621.762:669.245

BABICH, B. N., BERESTEN', N. Ye., LYUKEVICH, V. I., ROMANOVICH, I. V., TIMOFEYEVA, N. I., Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 25-30.

and cold drawing, the batch with poorer distribution showed intensive particle growth, probably as a result of accumulation of particles into conglomerates.

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UDC 669.24'298:620.185.5

BABICH, B. N., LYUKEVICH, V. I., LEVINSKAYA, M. KH. and ROMASHOV, V. M.

"Recrystallization of Nickel Strengthened With Thorium Dioxide"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 36-40

Abstract: The study deals with the recrystallization of nickel strengthened with thorium dioxide following cold drawing and anneals of extruded metal powder rods. The material's composition was 96.89% NI; 2.81% ThO $_2$; 0.07%

C; 0.008% S; 0.003% P; 0.08% Fe; 0.037% Cu. Precipitation-hardened nickel has an extremely stable structure which explains the preservation of a considerable strengthening effect as a result of cold drawing after high-temperature annealing. The material features a wide temperature interval between the recovery occurring at 400-600°C and the recrystallization which develops at 1200-1400°C. On recrystallization, the precipitation-hardened nickel develops a structural inhomogeneity which is stable up to 1400°C. The amount of large recrystallized grains is governed by the preliminary deformation ratio and annealing temperatures. An increase in cold deformation activates the recrystallization of nickel strengthened with ThO.,

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